```
=> d his ful

     (FILE 'HOME' ENTERED AT 13:51:00 ON 08 OCT 2009)

     FILE 'REGISTRY' ENTERED AT 13:51:26 ON 08 OCT 2009
L1             57 SEA SPE=ON  ABB=ON  PLU=ON  NI (L) CU (L) CR (L) PT/ELS
L2              2 SEA SPE=ON  ABB=ON  PLU=ON  L1 (L) 4/ELC.SUB

     FILE 'HCAPLUS' ENTERED AT 13:52:33 ON 08 OCT 2009
L3              1 SEA SPE=ON  ABB=ON  PLU=ON  L2
                  D SCA
                  D L3 TI AU
L4             44 SEA SPE=ON  ABB=ON  PLU=ON  L1


L5                QUE SPE=ON  ABB=ON  PLU=ON  FUEL#(W)CELL#
L6                QUE SPE=ON  ABB=ON  PLU=ON  CAT# OR ?CATAL?

     FILE 'HCAPLUS' ENTERED AT 13:55:59 ON 08 OCT 2009
L7              1 SEA SPE=ON  ABB=ON  PLU=ON  L6 AND L4
L8              1 SEA SPE=ON  ABB=ON  PLU=ON  L5 AND L4
L9              1 SEA SPE=ON  ABB=ON  PLU=ON  L7 OR L8
                  D L9 TI AU

     FILE 'ZCAPLUS' ENTERED AT 13:58:22 ON 08 OCT 2009
L10               QUE SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
                  W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
                  W)CR# OR PT#(W)CR#(W)NI#

     FILE 'JAPIO, PASCAL, ENERGY, TULSA, COMPENDEX, INSPEC, WPIX,
     HCAPLUS' ENTERED AT 14:01:50 ON 08 OCT 2009
L11            31 SEA SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
                  W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
                  W)CR# OR PT#(W)CR#(W)NI#
L12            14 SEA SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
                  W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
                  W)CR# OR PT#(W)CR#(W)NI#
L13            10 SEA SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
                  W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
                  W)CR# OR PT#(W)CR#(W)NI#
L14             0 SEA SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
                  W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
                  W)CR# OR PT#(W)CR#(W)NI#
L15            20 SEA SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
                  W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
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              W)CR# OR PT#(W)CR#(W)NI#
L16        48 SEA SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
              W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
              W)CR# OR PT#(W)CR#(W)NI#
L17       114 SEA SPE=ON  ABB=ON  PLU=ON  NI#/BI,ABEX(W)PT#/BI,ABEX(W)C
              R#/BI,ABEX OR NI#/BI,ABEX(W)CR#/BI,ABEX(W)PT#/BI,ABEX OR
              CR#/BI,ABEX(W)NI#/BI,ABEX(W)PT#/BI,ABEX OR CR#/BI,ABEX(W)
              PT#/BI,ABEX(W)NI#/BI,ABEX OR PT#/BI,ABEX(W)NI#/BI,ABEX(W)
              CR#/BI,ABEX OR PT#/BI,ABEX(W)CR#/BI,ABEX(W)NI#/BI,ABEX
L18       176 SEA SPE=ON  ABB=ON  PLU=ON  NI#(W)PT#(W)CR# OR NI#(W)CR#(
              W)PT# OR CR#(W)NI#(W)PT# OR CR#(W)PT#(W)NI# OR PT#(W)NI#(
              W)CR# OR PT#(W)CR#(W)NI#
    TOTAL FOR ALL FILES
L19       413 SEA SPE=ON  ABB=ON  PLU=ON  L10
              D L19 KWIC
L20         5 SEA SPE=ON  ABB=ON  PLU=ON  L11 AND L6
L21         3 SEA SPE=ON  ABB=ON  PLU=ON  L12 AND L6
L22         3 SEA SPE=ON  ABB=ON  PLU=ON  L13 AND L6
L23         0 SEA SPE=ON  ABB=ON  PLU=ON  L14 AND L6
L24         5 SEA SPE=ON  ABB=ON  PLU=ON  L15 AND L6
L25         5 SEA SPE=ON  ABB=ON  PLU=ON  L16 AND L6
L26        16 SEA SPE=ON  ABB=ON  PLU=ON  L17 AND L6
L27        38 SEA SPE=ON  ABB=ON  PLU=ON  L18 AND L6
    TOTAL FOR ALL FILES
L28        75 SEA SPE=ON  ABB=ON  PLU=ON  L19 AND L6
              D L27 9-12 KWIC
L29         0 SEA SPE=ON  ABB=ON  PLU=ON  L20 AND L5
L30         3 SEA SPE=ON  ABB=ON  PLU=ON  L21 AND L5
L31         2 SEA SPE=ON  ABB=ON  PLU=ON  L22 AND L5
L32         0 SEA SPE=ON  ABB=ON  PLU=ON  L23 AND L5
L33         3 SEA SPE=ON  ABB=ON  PLU=ON  L24 AND L5
L34         2 SEA SPE=ON  ABB=ON  PLU=ON  L25 AND L5
L35         0 SEA SPE=ON  ABB=ON  PLU=ON  L26 AND L5
L36         4 SEA SPE=ON  ABB=ON  PLU=ON  L27 AND L5
    TOTAL FOR ALL FILES
L37        14 SEA SPE=ON  ABB=ON  PLU=ON  L28 AND L5

    FILE 'ZCAPLUS' ENTERED AT 14:08:22 ON 08 OCT 2009

L38           QUE SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
              OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
              TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
              L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#

    FILE 'JAPIO, PASCAL, ENERGY, TULSA, COMPENDEX, INSPEC, WPIX,
    HCAPLUS' ENTERED AT 14:38:33 ON 08 OCT 2009
L39        13 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
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                  OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
                  TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
                  L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#
L40             1 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
                  OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
                  TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
                  L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#
L41             3 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
                  OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
                  TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
                  L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#
L42             0 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
                  OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
                  TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
                  L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#
L43             3 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
                  OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
                  TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
                  L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#
L44             3 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
                  OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
                  TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
                  L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#
L45           196 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#/BI,ABEX(W)NICKEL#/B
                  I,ABEX(W)CHROM?/BI,ABEX OR PLATINUM#/BI,ABEX(W)CHROM?/BI,
                  ABEX(W)NICKEL#/BI,ABEX OR NICKEL#/BI,ABEX(W)CHROM?/BI,ABE
                  X(W)PLATINUM#/BI,ABEX OR NICKEL#/BI,ABEX(W)PLATINUM#/BI,A
                  BEX(W)CHROM?/BI,ABEX  OR CHROM?/BI,ABEX(W)NICKEL?/BI,ABEX
                  (W)PLATINUM#/BI,ABEX OR CHROM?/BI,ABEX(W)PLATINUM#/BI,ABE
                  X(W)NICKEL#/BI,ABEX
L46            37 SEA SPE=ON  ABB=ON  PLU=ON  PLATINUM#(W)NICKEL#(W)CHROM?
                  OR PLATINUM#(W)CHROM?(W)NICKEL# OR NICKEL#(W)CHROM?(W)PLA
                  TINUM# OR NICKEL#(W)PLATINUM#(W)CHROM?  OR CHROM?(W)NICKE
                  L?(W)PLATINUM# OR CHROM?(W)PLATINUM#(W)NICKEL#
     TOTAL FOR ALL FILES
L47           256 SEA SPE=ON  ABB=ON  PLU=ON  L38
L48             1 SEA SPE=ON  ABB=ON  PLU=ON  L39 AND L6
L49             0 SEA SPE=ON  ABB=ON  PLU=ON  L40 AND L6
L50             1 SEA SPE=ON  ABB=ON  PLU=ON  L41 AND L6
L51             0 SEA SPE=ON  ABB=ON  PLU=ON  L42 AND L6
L52             0 SEA SPE=ON  ABB=ON  PLU=ON  L43 AND L6
L53             0 SEA SPE=ON  ABB=ON  PLU=ON  L44 AND L6
L54            19 SEA SPE=ON  ABB=ON  PLU=ON  L45 AND L6
L55            12 SEA SPE=ON  ABB=ON  PLU=ON  L46 AND L6
     TOTAL FOR ALL FILES
L56            33 SEA SPE=ON  ABB=ON  PLU=ON  L47 AND L6
                  D L55 1-2 KWIC
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L57            0 SEA SPE=ON  ABB=ON  PLU=ON  L48 AND L5
L58            0 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L5
L59            1 SEA SPE=ON  ABB=ON  PLU=ON  L50 AND L5
L60            0 SEA SPE=ON  ABB=ON  PLU=ON  L51 AND L5
L61            0 SEA SPE=ON  ABB=ON  PLU=ON  L52 AND L5
L62            0 SEA SPE=ON  ABB=ON  PLU=ON  L53 AND L5
L63            2 SEA SPE=ON  ABB=ON  PLU=ON  L54 AND L5
L64            2 SEA SPE=ON  ABB=ON  PLU=ON  L55 AND L5
     TOTAL FOR ALL FILES
L65            5 SEA SPE=ON  ABB=ON  PLU=ON  L56 AND L5
L66            0 SEA SPE=ON  ABB=ON  PLU=ON  L29 OR L57
L67            3 SEA SPE=ON  ABB=ON  PLU=ON  L30 OR L58
L68            3 SEA SPE=ON  ABB=ON  PLU=ON  L31 OR L59
L69            0 SEA SPE=ON  ABB=ON  PLU=ON  L32 OR L60
L70            3 SEA SPE=ON  ABB=ON  PLU=ON  L33 OR L61
L71            2 SEA SPE=ON  ABB=ON  PLU=ON  L34 OR L62
L72            2 SEA SPE=ON  ABB=ON  PLU=ON  L35 OR L63
L73            4 SEA SPE=ON  ABB=ON  PLU=ON  L36 OR L64
     TOTAL FOR ALL FILES
L74           17 SEA SPE=ON  ABB=ON  PLU=ON  L37 OR L65
               D SAV
L75            9 DUP REMOV L74 (8 DUPLICATES REMOVED)
                    ANSWERS '1-3' FROM FILE PASCAL
                    ANSWER '4' FROM FILE ENERGY
                    ANSWER '5' FROM FILE COMPENDEX
                    ANSWER '6' FROM FILE INSPEC
                    ANSWERS '7-8' FROM FILE WPIX
                    ANSWER '9' FROM FILE HCAPLUS

     FILE 'REGISTRY' ENTERED AT 14:42:35 ON 08 OCT 2009
               SAV L1 HAINICUCRPT/A
L76           12 SEA SPE=ON  ABB=ON  PLU=ON  L1 (L) 4-7/ELC.SUB

     FILE 'HCAPLUS' ENTERED AT 14:43:29 ON 08 OCT 2009
L77            6 SEA SPE=ON  ABB=ON  PLU=ON  L76
               D L77 1-6 TI AU


     FILE HOME

     FILE REGISTRY
     Property values tagged with IC are from the ZIC/VINITI data file
     provided by InfoChem.

     STRUCTURE FILE UPDATES:    6 OCT 2009  HIGHEST RN 1187511-69-8
     DICTIONARY FILE UPDATES:   6 OCT 2009  HIGHEST RN 1187511-69-8
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TSCA INFORMATION NOW CURRENT THROUGH June 26, 2009.

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For informatio on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

FILE HCAPLUS

FILE COVERS 1907 - 8 Oct 2009 VOL 151 ISS 15
FILE LAST UPDATED: 7 Oct 2009 (20091007/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2009

HCAplus now includes complete International Patent Classification (I reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

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FILE ZCAPLUS

FILE COVERS 1907 - 8 Oct 2009 VOL 151 ISS 15
FILE LAST UPDATED: 7 Oct 2009 (20091007/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2009

ZCAplus now includes complete International Patent Classification (I
reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

FILE JAPIO
FILE LAST UPDATED: 30 SEP 2009 <20090930/UP>
MOST RECENT PUBLICATION DATE: 25 JUN 2009 <20090625/PD>
>>> GRAPHIC IMAGES AVAILABLE <<<

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION (SLART) IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

FILE PASCAL
FILE LAST UPDATED: 5 OCT 2009 <20091005/UP>
FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

FILE ENERGY
FILE LAST UPDATED: 6 OCT 2009 <20091006/UP>
FILE COVERS 1974 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN
THE BASIC INDEX >>>

FILE TULSA

FILE COVERS 1965 TO 7 Oct 2009 (20091007/ED)

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The TULSA file has been reloaded.  Enter HELP RLOAD for details.

Monthly SDI frequency now available.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

FILE COMPENDEX
FILE LAST UPDATED: 5 OCT 2009       <20091005/UP>
FILE COVERS 1970 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE IN
    THE BASIC INDEX (/BI), ABSTRACT (/AB), and TITLE (/TI) FIELDS  >

<<< Reloaded and enhanced COMPENDEX file is now available
                           - see 'HELP RLOAD' for details <<<

FILE INSPEC
FILE LAST UPDATED: 5 OCT 2009       <20091005/UP>
FILE COVERS 1898 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN
    THE ABSTRACT (/AB), BASIC INDEX (/BI) AND TITLE (/TI) FIELDS  >>

FILE WPIX
FILE LAST UPDATED:          1 OCT 2009   <20091001/UP>
MOST RECENT UPDATE:           200963      <200963/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE
>>> Now containing more than 1.4 million chemical structures in DCR

>>> IPC, ECLA, US National Classifications and Japanese F-Terms
    and FI-Terms have been updated with reclassifications to
    mid-June 2009.
    No update date (UP) has been created for the reclassified
    documents, but they can be identified by
    specific update codes (see HELP CLA for details)<<<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.com/stn_guide.html

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomsonreuters.com/support/patents/coverage/latest

EXPLORE DERWENT WORLD PATENTS INDEX IN STN ANAVIST, VERSION 2.0:
http://www.stn-international.com/DWPIAnaVist2_0608.html
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>>> HELP for European Patent Classifications see HELP ECLA, HELP ICO

=> d l77 1-6 bib abs hitstr hitind

L77  ANSWER 1 OF 6  HCAPLUS  COPYRIGHT 2009 ACS on STN
AN   2005:16051  HCAPLUS  Full-text
DN   142:117646
TI   Platinum-chromium-copper/nickel fuel cell catalyst
IN   Chondroudis, Konstantinos; Gorer, Alexander; Devenney, Martin; He,
     Ting; Oyanagi, Hiroyuki; Giaquinta, Daniel M.; Urata, Kenta; Fukuda,
     Hiroichi; Fan, Qun; Strasser, Peter
PA   Symyx Technologies, Inc., USA; Honda Giken Kogyo Kabushiki Kaisha
SO   PCT Int. Appl., 70 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------
     --------
PI   WO 2005001967        A1    20050106    WO 2004-US17333
                                                                    200406
                                                                    03
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,
             KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
             MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,
             SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
             VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
             DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
             PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
     US 20060251952       A1    20061109    US 2005-559637
                                                                    200512
                                                                    02
PRAI US 2003-475559P      P     20030603
     WO 2004-US17333      W     20040603
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB    A fuel cell catalyst comprising platinum, chromium, and copper,
      nickel or a combination thereof is disclosed.  In one or more
      embodiments, the concentration of platinum is less than 50 atomic%,
      and/or the concentration of chromium is less than 30 atomic%, and/or
      the concentration of copper, nickel, or a combination thereof is at
      least 35 atomic%.
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IT    821770-74-5P   821770-75-6P
      RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP
      (Preparation); USES (Uses)
         (platinum-chromium-copper/nickel fuel cell catalyst)
RN    821770-74-5  HCAPLUS
CN    Platinum alloy, base, Pt 48,Cu 31,Cr 13,Ni 7.3 (9CI)  (CA INDEX
      NAME)

Component   Component      Component
             Percent    Registry Number
=========+=============+===============
    Pt         48           7440-06-4
    Cu         31           7440-50-8
    Cr         13           7440-47-3
    Ni          7.3         7440-02-0

RN    821770-75-6  HCAPLUS
CN    Platinum alloy, base, Pt 49,Cu 24,Ni 15,Cr 13 (9CI)  (CA INDEX NAME)

Component   Component      Component
             Percent    Registry Number
=========+=============+===============
    Pt         49           7440-06-4
    Cu         24           7440-50-8
    Ni         15           7440-02-0
    Cr         13           7440-47-3

IC    ICM  H01M004-92
      ICS  H01M004-96; B01J023-26; B01J023-42; B01J023-72; B01J023-755;
           B01J023-86; B01J023-89; H01M008-10
CC    52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
      Section cross-reference(s): 56, 67
IT    821770-72-3P   821770-73-4P   821770-74-5P
      821770-75-6P   821770-76-7P   821770-77-8P   821770-78-9P
      821770-79-0P   821770-80-3P   821770-81-4P   821770-82-5P
      821770-83-6P   821770-84-7P   821770-85-8P   821770-86-9P
      821770-87-0P   821770-88-1P   821770-89-2P   821770-90-5P
      821770-91-6P   821770-92-7P   821770-93-8P   821770-94-9P
      821770-95-0P   821770-96-1P   821770-97-2P   821770-98-3P
      821770-99-4P   821771-00-0P   821771-01-1P   821771-02-2P
      821771-03-3P   821771-04-4P   821771-05-5P   821771-06-6P
      821771-07-7P   821771-08-8P   821771-09-9P   821771-10-2P
      821771-11-3P   821771-12-4P   821771-13-5P   821771-14-6P
      821771-15-7P   821771-16-8P   821771-17-9P   821771-18-0P
      821771-19-1P   821771-20-4P   821771-21-5P   821771-22-6P
      821771-23-7P   821771-24-8P   821771-25-9P   821771-27-1P
      821771-28-2P   821771-29-3P   821771-30-6P   821771-31-7P
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821771-32-8P 821771-33-9P 821771-34-0P 821771-35-1P
821771-36-2P 821771-37-3P 821771-38-4P 821771-39-5P
821771-40-8P 821771-41-9P 821771-42-0P 821771-43-1P
821771-44-2P 821771-45-3P 821771-46-4P 821771-47-5P
821771-48-6P 821771-49-7P 821771-50-0P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(platinum-chromium-copper/nickel fuel cell catalyst)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L77 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:833342 HCAPLUS Full-text

DN 137:332329

TI Magnetic recording medium with high coercivity for use with an inductive-MR composite head

IN Yoshikawa, Toshihiko; Sakawaki, Akira; Sakai, Hiroshi

PA Showa Denko K.K., Japan

SO U.S. Pat. Appl. Publ., 14 pp., Cont.-in-part of U.S. Ser. No. 493,037, abandoned.
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6815097	A1	20021031	US 2002-78659	20020221
	US 6815097	B2	20041109		
	JP 2000222715	A	20000811	JP 1999-23256	19990129
PRAI	JP 1999-23256	A	19990129		
	US 1999-121691P	P	19990225		
	US 2000-493037	B2	20000128		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention relates to a high-d. magnetic recording medium with high coercivity and minimal deterioration of overwrite and off-track properties. The medium is designed for use with a reproducing device employing a magnetoresistive effect, such as an inductive-MR composite head. The magnetic recording medium comprises a non-magnetic substrate, a non-magnetic underlayer, a magnetic recording layer, a soft magnetic layer, and a protective layer. The coercivity

is 2,500 Oe or more, and the thickness of the soft magnetic layer is between 5 and 50 Å.

IT 473710-90-6, Chromium 18, cobalt 67, copper 1, nickel 3, platinum 8, tantalum 3 (atomic) 473710-92-8, Chromium 18, cobalt 65, copper 1, nickel 5, platinum 8, tantalum 3 (atomic) 473710-94-0, Chromium 18, cobalt 63, copper 1, nickel 7, platinum 8, tantalum 3 (atomic)
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(magnetic recording material; magnetic recording medium with high coercivity for use with an inductive-MR composite head)

RN 473710-90-6 HCAPLUS
CN Cobalt alloy, base, Co 55,Pt 22,Cr 13,Ta 7.5,Ni 2.4,Cu 0.9 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Co	55	7440-48-4
Pt	22	7440-06-4
Cr	13	7440-47-3
Ta	7.5	7440-25-7
Ni	2.4	7440-02-0
Cu	0.9	7440-50-8

RN 473710-92-8 HCAPLUS
CN Cobalt alloy, base, Co 53,Pt 22,Cr 13,Ta 7.5,Ni 4.1,Cu 0.9 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Co	53	7440-48-4
Pt	22	7440-06-4
Cr	13	7440-47-3
Ta	7.5	7440-25-7
Ni	4.1	7440-02-0
Cu	0.9	7440-50-8

RN 473710-94-0 HCAPLUS
CN Cobalt alloy, base, Co 51,Pt 22,Cr 13,Ta 7.5,Ni 5.7,Cu 0.9 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Co	51	7440-48-4

Pt	22	7440-06-4
Cr	13	7440-47-3
Ta	7.5	7440-25-7
Ni	5.7	7440-02-0
Cu	0.9	7440-50-8

IC ICM G11B005-64
INCL 428694000T
CC 77-8 (Magnetic Phenomena)
IT 146241-23-8, Chromium 18, cobalt 70, platinum 12 (atomic)
161678-97-3, Chromium 13, cobalt 84, tantalum 3 (atomic)
264260-04-0, Chromium 18, cobalt 71, platinum 8, tantalum 3 (atomic)
375855-19-9, Boron 4, cobalt 64, chromium 24, platinum 8 (atomic)
421766-23-6, Boron 4, cobalt 73, chromium 15, platinum 8 (atomic)
473710-85-9, Chromium 18, cobalt 70, copper 1, platinum 8, tantalum 3 (atomic) 473710-87-1, Chromium 20, cobalt 68, copper 2, platinum 9, tantalum 1 (atomic) 473710-90-6, Chromium 18, cobalt 67, copper 1, nickel 3, platinum 8, tantalum 3 (atomic)
473710-92-8, Chromium 18, cobalt 65, copper 1, nickel 5, platinum 8, tantalum 3 (atomic) 473710-94-0, Chromium 18, cobalt 63, copper 1, nickel 7, platinum 8, tantalum 3 (atomic)
473710-96-2, Boron 8, chromium 18, cobalt 62, platinum 12 (atomic)
473710-98-4, Boron 10, chromium 18, cobalt 60, platinum 12 (atomic)
473710-99-5, Boron 12, chromium 18, cobalt 58, platinum 12 (atomic)
473711-00-1, Boron 16, chromium 18, cobalt 54, platinum 12 (atomic)
473711-02-3, Boron 22, chromium 18, cobalt 48, platinum 12 (atomic)
473711-03-4, Boron 12, chromium 18, cobalt 60, platinum 10 (atomic)
473711-04-5, Boron 12, chromium 18, cobalt 56, platinum 14 (atomic)
473711-05-6, Boron 12, chromium 18, cobalt 54, platinum 16 (atomic)
473711-07-8, Boron 12, chromium 18, cobalt 52, platinum 18 (atomic)
473711-08-9, Boron 12, chromium 18, cobalt 48, platinum 22 (atomic)
473711-09-0, Boron 12, chromium 18, cobalt 56, platinum 12, ruthenium 2 (atomic) 473711-10-3, Boron 12, chromium 18, cobalt 54, platinum 12, ruthenium 4 (atomic) 473711-11-4, Boron 12, chromium 18, cobalt 52, platinum 12, ruthenium 6 (atomic)
473711-12-5, Boron 12, chromium 18, cobalt 48, platinum 12, ruthenium 10 (atomic) 473711-13-6, Boron 12, chromium 18, cobalt 36, platinum 12, ruthenium 22 (atomic) 473711-14-7, Boron 4, cobalt 61, chromium 27, platinum 8 (atomic) 473711-15-8, Boron 4, cobalt 63, chromium 25, platinum 8 (atomic) 473711-16-9, Boron 8, cobalt 64, chromium 14, platinum 14 (atomic) 473711-17-0, Boron 8, cobalt 66, chromium 12, platinum 14 (atomic) 473711-18-1, Boron 8, cobalt 65, chromium 13, platinum 14 (atomic)
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(magnetic recording material; magnetic recording medium with high coercivity for use with an inductive-MR composite head)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L77 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1988:226904 HCAPLUS Full-text
DN 108:226904
OREF 108:37153a,37156a
TI Platinum-based alloy with high abrasion resistance for jewellery and dental materials
IN Morozumi, Fujio
PA Izima Kingin Kogyo Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62270738	A	19871125	JP 1986-110592	19860516
PRAI	JP 1986-110592		19860516		

AB A Pt alloy with excellent abrasion resistance and toughness consists of Pd 1.5-6.0, Cu 1.4-5.8, Ni 1.5-6.0, Co 0.5-1.0, Be 0.03-0.3, Cr 0.3-1.5%, and balance Pt. This alloy has excellent workability and is useful for jewelry and artificial teeth. A Be 0.1, Cr 0.6, Co 1.0, Cu 2.9, Ni 3.0, and Pt 90.0 weight% alloy showed tensile strength 55-56 kg/mm2, elongation 26-27%, and hardness 200-220 HV.
IT 114814-94-7P 114814-95-8P
114814-96-9P 114814-97-0P
RL: PREP (Preparation)
(manufacture of abrasion-resistant, for dental materials and jewelry)
RN 114814-94-7 HCAPLUS
CN Platinum alloy, base, Pt 79-95,Ni 1.5-6,Pd 1.5-6,Cu 1.4-5.8,Cr 0.3-1.5,Co 0.5-1,Be 0-0.3 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Pt	79 - 95	7440-06-4
Ni	1.5 - 6	7440-02-0
Pd	1.5 - 6	7440-05-3
Cu	1.4 - 5.8	7440-50-8
Cr	0.3 - 1.5	7440-47-3
Co	0.5 - 1	7440-48-4

Be	0 - 0.3	7440-41-7

RN 114814-95-8 HCAPLUS
CN Platinum alloy, base, Pt 89-95,Ni 1.5-4,Pd 1.5-4,Cu 1.4-4,Cr 0.3-1.5,Co 0.5-1,Be 0-0.2 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Pt	89 - 95	7440-06-4
Ni	1.5 - 4	7440-02-0
Pd	1.5 - 4	7440-05-3
Cu	1.4 - 4	7440-50-8
Cr	0.3 - 1.5	7440-47-3
Co	0.5 - 1	7440-48-4
Be	0 - 0.2	7440-41-7

RN 114814-96-9 HCAPLUS
CN Platinum alloy, base, Pt 85,Pd 5,Cu 4.9,Ni 4,Co 1,Cr 0.8,Be 0.1 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Pt	85	7440-06-4
Pd	5	7440-05-3
Cu	4.9	7440-50-8
Ni	4	7440-02-0
Co	1	7440-48-4
Cr	0.8	7440-47-3
Be	0.1	7440-41-7

RN 114814-97-0 HCAPLUS
CN Platinum alloy, base, Pt 90,Ni 3,Pd 3,Cu 2.9,Co 1,Cr 0.6,Be 0.1 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Pt	90	7440-06-4
Ni	3	7440-02-0
Pd	3	7440-05-3
Cu	2.9	7440-50-8
Co	1	7440-48-4
Cr	0.6	7440-47-3
Be	0.1	7440-41-7

IC ICM C22C005-04
CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 56
IT 114814-94-7P 114814-95-8P
114814-96-9P 114814-97-0P
RL: PREP (Preparation)
(manufacture of abrasion-resistant, for dental materials and jewelry)

L77 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1985:564817 HCAPLUS Full-text
DN 103:164817
OREF 103:26407a,26410a
TI Gold alloy sliding electric contacts
PA Tanaka Noble Metal Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60084782	A	19850514	JP 1983-193655	19831017
PRAI	JP 1983-193655		19831017		

AB The sliding elec. contact point consists of a brush made from 0.5-10 weight% Cr, Mg, Zr, and/or P and balance Au-(3-7) Pt-(8-12) Ag-(12-16) Cu-(0.1-2) Ni alloy and a commutator or a slip ring made from Ag(3-12) Cu alloy or Ag-(3-12) Cu-(≤ 5) Cd alloy. The apparatus has low contact resistance and shows little abrasion loss. Thus, a brush made from 5 weight% Cr and balance Au70-Pt5-Ag10-Cu14-Ni1 alloy and a slip ring made from Ag92.5-Cu7.5 alloy [37350-65-5] were prepared as a sliding contact point apparatus The apparatus was tested 7 h under conditions of 0.6 A, 12 V, 1000 rpm, peripheral velocity 130-120 m/min, and contact pressure 100 g to show abrasion losses of the brush 6.0 mg and the slip ring 105 mg and 12-99 mΩ contact resistance, compared to 10.6 mg, 288 mg, and 14-290 mΩ resp., when using the Au alloy without Cr as the brush and Ag 89.0-Cd 11.0 alloy as the slip ring.
IT 91886-46-3
RL: DEV (Device component use); USES (Uses)
(for elec. brushes)
RN 91886-46-3 HCAPLUS
CN Gold alloy, base, Au 67,Cu 13,Ag 9.5,Cr 4.8,Pt 4.8,Ni 1 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Au	67	7440-57-5
Cu	13	7440-50-8
Ag	9.5	7440-22-4
Cr	4.8	7440-47-3
Pt	4.8	7440-06-4
Ni	1	7440-02-0

IC ICM H01R039-20
ICA C22C005-02
CC 56-3 (Nonferrous Metals and Alloys)
Section cross-reference(s): 76
IT 91886-46-3 98699-50-4 98699-51-5 98699-52-6
RL: DEV (Device component use); USES (Uses)
(for elec. brushes)

L77 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1984:515407 HCAPLUS Full-text
DN 101:115407
OREF 101:17565a
TI Sliding electric contact alloy
PA Tanaka Noble Metal Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 2 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59100243	A	19840609	JP 1982-208267	19821127
	JP 02052692	B	19901114		
PRAI	JP 1982-208267		19821127		

AB To the conventional alloy containing Au 69-71, Pt 4-6, Ag 9-10, Cu 13-15, and Ni 0.5-1.5 there is added ≥1 of Cr, Mg, and P 0.5-15%. A 0.7 + 8 mm wire was tested at 0.6 A, 12 V, 1000 rpm, circular velocity 120-130 m/min, and contact force 100 g for 7 h. The wear was 2.1-3.2 mg and contact resistivity 12-65 m, compared to 7.5 and 10-330 with the original. Thus, 5% Cr was added to Au 70, Pt 5, Ag 10, Cu 14, Ni 1% alloy.

IT 91886-46-3
RL: TEM (Technical or engineered material use); USES (Uses)

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        (for elec. contacts, with sliding wire resistance)
RN   91886-46-3  HCAPLUS
CN   Gold alloy, base, Au 67,Cu 13,Ag 9.5,Cr 4.8,Pt 4.8,Ni 1 (9CI)  (CA
     INDEX NAME)

Component   Component      Component
             Percent    Registry Number
=========+=============+================
    Au         67             7440-57-5
    Cu         13             7440-50-8
    Ag          9.5           7440-22-4
    Cr          4.8           7440-47-3
    Pt          4.8           7440-06-4
    Ni          1             7440-02-0

IC   C22C005-02
ICA  H01B001-02; H01H001-02
CC   56-3 (Nonferrous Metals and Alloys)
     Section cross-reference(s): 76
IT   91886-46-3
     RL: TEM (Technical or engineered material use); USES (Uses)
        (for elec. contacts, with sliding wire resistance)

L77  ANSWER 6 OF 6  HCAPLUS  COPYRIGHT 2009 ACS on STN
AN   1936:25942  HCAPLUS  Full-text
DN   30:25942
OREF 30:3398d-e
TI   Noble metal alloys
IN   Zschelletzschky, Alfred
DT   Patent
LA   Unavailable
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------
     --------
PI   DE 626084                  19360220    DE 1931-Z20344
                                                                    193109
                                                                    20
AB    Alloys containing Pt 0.01-5, Au 33.3-75, Ag 1-20, Cu 15-50, Ni 5-25
      and Cr 0.001-22% are used in dentistry or for making articles
      required to resist chemical influences and mech. strain, e. g.,
      surgical instruments.
IT   705289-58-3P, Nickel alloys, chromium-Cu-Au-Pt-Ag-
     RL: PREP (Preparation)
        (preparation of)
RN   705289-58-3  HCAPLUS
CN   Silver alloys, chromium-Cu-Au-Ni-Pt- (3CI)  (CA INDEX NAME)
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Component    Component
           Registry Number
=========+===============
    Ag         7440-22-4
    Au         7440-57-5
    Cr         7440-47-3
    Cu         7440-50-8
    Ni         7440-02-0
    Pt         7440-06-4

INCL 40B.4
CC    9 (Metallurgy and Metallography)
IT    705289-58-3P, Nickel alloys, chromium-Cu-Au-Pt-Ag-
      RL: PREP (Preparation)
         (preparation of)


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YOU HAVE REQUESTED DATA FROM FILE 'PASCAL, ENERGY, COMPENDEX, INSPEC, WPIX
, HCAPLUS' - CONTINUE? (Y)/N:y
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L75   ANSWER 1 OF 9 PASCAL COPYRIGHT 2009 INIST-CNRS. ALL RIGHTS RESERVED. on STN   DUPLICATE 2

AN   2009-0282291   PASCAL   Full-text

TIEN Improvement of methanol electro-oxidation activity of PtRu/C and PtNiCr/C catalysts by anodic treatment

AU   KUJEON Min; MCGINN Paul J.
CS   Department of Chemical and Biomolecular Eng., University of Notre Dame, 178 Fitzpatrick, Notre Dame, IN 46556, United States

SO   Journal of power sources, (2009), 188(2), 427-432, 36 refs.
      ISSN: 0378-7753 CODEN: JPSODZ

DT   Journal
BL   Analytic
CY   Switzerland
LA   English
AV   INIST-17113, 354000185947550120

AB   The effect of an anodic treatment on the methanol oxidation activity of PtRu/C (50:50 atomic%) and PtNiCr/C (Pt: Ni:Cr=28:36:36 atomic%) catalysts was investigated for various potential limits of 0.9,1.1,1.3 and 1.4 V(vs. reference hydrogen electrode, RHE). NaBH.sub.4 reduced catalysts were further reduced at 900 C for 5 min

in an argon balanced hydrogen flow stream. Improved alloying was obtained by the hydrogen reduction procedure as confirmed by X-ray diffraction results. In the PtRu/C **catalyst**, a decrease of irreversible Ru (hydrous) oxide formation was observed when the anodic treatment was performed at 1.1 V (vs. RHE) or higher potentials. In chronoamperometry testing performed for 60 min at 0.6V (vs. RHE), the highest activity of the PtRu/C **catalyst** was observed when anodic treatment was performed at 1.3 V (vs. RHE). The current density increased from 1.71 to 4.06A g.sub.c.sub.a.sub.t.sub...sup.-.sup.1 after the anodic treatment. In the PtNiCr/C **catalyst**, dissolution of Ni and Cr was observed when potentials >=1.3 v (vs. RHE) were applied during the anodic treatment. In MOR activity tests, the current density of the PtNiCr/C **catalyst** dramatically increased by more than 13.5 times (from 0.182 to 2.47Ag.sub.c.sub.a.sub.t.sub...sup.- .sup.1) when an anodic treatment was performed at 1.4V. On an Ag.sub.n.sub.o.sub.b.sub.l.sub.e.sub. .sub.m.sub.e.sub.r.sub.a.sub.l.sup.-.sup.1 basis, the current density of PtNiCr-1.4V is slightly higher than the best anodically treated PtRu-1.3V **catalyst**, suggesting the PtNiCr **catalyst** is a promising candidate to replace the PtRu **catalysts**.

CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels
230; Energy

CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles
230; Energie

CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles
230; Energia

CT Methanol; Ruthenium; **Catalyst**; Platinum; Nickel; Chromium; Reference electrode; Hydrogen; X ray diffractometry; Chronoamperometry; Current density; Oxidation; Alcohol **fuel cells**; Cyclic voltammetry

CTFR Methanol; Ruthenium; **Catalyseur**; Platine; Nickel; Chrome; Electrode reference; Hydrogene; Diffractometrie RX; Chronoamperometrie; Densite courant; Oxydation; Pile combustible alcool; Voltammetrie cyclique

CTES Metanol; Rutenio; **Catalizador**; Platino; Niquel; Cromo; Electrodo referencia; Hidrogeno; Difractometria RX; Cronoamperimetria; Densidad corriente; Oxidacion; Voltametria ciclica

L75 ANSWER 2 OF 9 PASCAL COPYRIGHT 2009 INIST-CNRS. ALL RIGHTS RESERVED. on STN DUPLICATE 3

AN 2008-0522086 PASCAL Full-text

TIEN Combinatorial screening of ternary Pt-Ni-Cr catalysts for methanol electro-oxidation

AU COOPER James S.; JEON Min Ku; MCGINN Paul J.
CS Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN 46556, United States

SO Electrochemistry communications, (2008), 10(10), 1545-1547, 23 refs.
ISSN: 1388-2481
DT Journal
BL Analytic
CY Netherlands
LA English
AV INIST-26863, 354000185846990340

AB Methanol electro-oxidation activity of ternary Pt- Ni-Cr system was studied by using a combinatorial screening method. A Pt-Ni-Cr thin-film library was prepared by sputtering and quickly characterized by a multichannel multielectrode analyzer. Among the 63 different composition thin-film catalysts, Pt.sub.2.sub.8Ni.sub.3.sub.6Cr.sub.3.sub.6 showed the highest methanol electro-oxidation activity and good stability. This new composition was also studied in its powder form by synthesizing and characterizing Pt.sub.2.sub.8Ni.sub.3.sub.6Cr.sub.3.sub.6/C catalyst. In chronoamperometry testing, the Pt.sub.2.sub.8Ni.sub.3.sub.6Cr.sub.3.sub.6/C catalyst exhibited "decay-free" behavior during 600 s operation by keeping its current density up to 97.1% of its peak current density, while the current densities of Pt/C and Pt.sub.5.sub.0Ru.sub.5.sub.0/C catalysts decreased to 14.0% and 60.3% of their peak current densities, respectively. At 600 s operation, current density of the Pt.sub.2.sub.8Ni.sub.3.sub.6Cr.sub.3.sub.6/C catalyst was 23.8 Ag.sub.n.sub.o.sub.b.sub.l.sub.e metal.sup.-.sup.1, while that of those of the Pt/C and Pt.sub.5.sub.0Ru.sub.5.sub.0/C catalysts were 2.74 and 18.8 A g.sub.n.sub.o.sub.b.sub.l.sub.e metal.sup.-.sup.1, respectively.

CC 001D06D03E; Applied sciences; Energy; Thermal use of fuels
230; Energy

CCFR 001D06D03E; Sciences appliquees; Energie; Utilisation thermique des combustibles
230; Energie

CCES 001D06D03E; Ciencias aplicadas; Energia; Utilizacion termica de los combustibles
230; Energia

CT High throughput screening; Property composition relationship; Methanol; Oxidation; Combinatorial chemistry; Alcohol fuel cells; Electrocatalysis; Catalyst

activity; Platinum alloy; Nickel alloy; Chromium alloy; Ternary alloy; Supported catalyst; Carbon; X ray diffraction; Primary alcohol; Electrochemical reaction

CTFR Criblage haut debit; Relation composition propriete; Methanol; Oxydation; Chimie combinatoire; Pile combustible alcool; Electrocatalyse; Activite catalytique; Platine alliage; Nickel alliage; Chrome alliage; Alliage ternaire; Catalyseur sur support; Carbone; Diffraction RX; Alcool primaire; Reaction electrochimique

CTES Cribado alta productividad; Relacion composicion propiedad; Metanol; Oxidacion; Quimica combinatoria; Electrocatalisis ; Actividad catalitica; Platino aleacion; Niquel aleacion; Cromo aleacion; Aleacion ternaria; Catalizador sobre soporte; Carbono; Difraccion RX; Alcohol primario; Reaccion electroquimica

L75 ANSWER 3 OF 9 PASCAL on STN

AN 1994-0025496 PASCAL Full-text

TIEN Enhanced electrocatalysis of oxygen reduction on platinum alloys in proton exchange membrane fuel cells

AU SANJEEV MUKERJEE; SUPRAMANIAM SRINIVASAN

CS Texas A&M univ. system, cent. electrochemical systems hydrogen res., Texas eng. exp. stn., College Station TX 77843-3402, United States

SO Journal of electroanalytical chemistry : (1992), (1993), 357(1-2), 201-224, 28 refs.

DT Journal

BL Analytic

CY Switzerland

LA English

AV INIST-1150, 354000048057770080

AB Enhanced electrocatalysis of the oxygen reduction reaction (ORR) on carbon-supported binary and ternary alloys of Pt in phosphoric acid fuel cells has been reported previously. This investigation focuses on the electrocatalysis of the ORR on some binary alloys of Pt (Pt+Ni, Pt+Cr and Pt+Co) at interfaces with proton exchange membranes (Dow perfluorinated sulfonic acids). Comparison of the results of these studies with those on carbon-supported Pt electrocatalysts (electrodes containing same Pt loading of 0.3 mg/cm.sup.2) revealed enhanced activities, lower activation energies and different reaction orders for all the alloys

CC 001C01H05; Chemistry; General chemistry, Physical chemistry;

Electrochemistry
CCFR 001C01H05; Chimie; Chimie generale, Chimie physique; Electrochimie
CCES 001C01H05; Quimica; Quimica general, Fisicoquimica; Electroquimica
CT Experimental study; Chemical reduction; Electrochemical reaction; Electrocatalysis; Oxygen; Electrodes; Chromium Alloys; Nickel Alloys; Cobalt Alloys; Modified material; Carbon; Fuel cell; Ion exchange membrane; Proton transfer; Kinetics; Temperature effect; Pressure effect; Platinium base alloy
CTFR Etude experimentale; Reduction chimique; Reaction electrochimique; Electrocatalyse; Oxygene; Electrode; Chrome Alliage; Nickel Alliage; Cobalt Alliage; Materiau modifie; Carbone; Pile combustible; Membrane echangeuse ion; Transfert proton; Cinetique; Effet temperature; Effet pression; Nafion 1100; Alliage PtCr; Pt Cr; Alliage PtNi; Pt Ni; Alliage PtCo; Pt Co; Alliage base platine
CTES Estudio experimental; Reduccion quimica; Reaccion electroquimica; Electrocatalisis; Oxigeno; Electrodo; Cromo Aleacion; Niquel Aleacion; Cobalto Aleacion; Material modificado; Carbono; Pila combustion; Membrana cambiadora ionica; Transferencia proton; Cinetica; Efecto temperatura; Efecto presion
BT Transition metal
BTFR Metal transition
BTDE Uebergangsmetalle
BTES Metal transicion

L75 ANSWER 4 OF 9 ENERGY COPYRIGHT 2009 USDOE/IEA-ETDE on STN
AN 1989(8):46867 ENERGY Full-text
TI Catalyst for fuel cell electrode.
AU Tsurumi, Kazunori [Japan]
CS Assignee(s): Tanaka Kikinzoku Kogyo Co., Ltd., Tokyo, (Japan)
PI JP 63-190253 5 Aug 1988
3 p.
AI 30 Jan 1987
DT Patent
CY Japan
LA Japanese
AB Heretofore, the material which is made by kneading the catalyst consisting of a carbon powder support carrying platinum in a state of fine particles together with a pressure sensitive adhesive has been used as the reaction layer of electrodes for fuel cell. However, in case of the cathode of the fuel cell which uses phosphoric acid as its electrolyte in particular, there has been defects that platinum in the state of very fine particles gradually flocculates and grain growth occurrs causing the decrease of the surface area of platinum and the decline of electromotive force of the fuel cell. In this invention, the catalyst is obtained whose surface area does not decrease due to grain growth even after using

it for a long period by using a platinum-nickel-chrome alloy instead of platinum alone as an active metallic particle of the catalyst for fuel cell electrode. Since nickel and chrome work like cocatalyst, there is also the effect of enhancing the initial activity as the oxygen reduction catalyst of the above alloy.

IC H01M004-90
CC *300503
CT *CATALYSTS: *CARBON; *FUEL CELLS: *CATALYSTS; *FUEL CELLS: *ELECTRODES; *CATALYSTS: *POWDERS; *CATALYSTS: *SUPPORTS; CHROMIUM ALLOYS; NICKEL; PLATINUM
BT ALLOYS; DIRECT ENERGY CONVERTERS; ELECTROCHEMICAL CELLS; ELEMENTS; MECHANICAL STRUCTURES; METALS; NONMETALS; PLATINUM METALS; TRANSITION ELEMENTS

L75 ANSWER 5 OF 9 COMPENDEX COPYRIGHT 2009 EEI on STNDUPLICATE 1
AN 2009-3612292038 COMPENDEX Full-text
TI Composition dependence of ternary Pt-Ni-Cr catalyst activity for the methanol electro-oxidation reaction
AU Jeon Min Ku; McGinn Paul J.
CS Jeon Min Ku; McGinn Paul J. (Department of Chemical and Biomolecular Engineering, University of Notre Dame, 178 Fitzpatrick, Notre Dame, IN 46556 (US))
EMAIL: mcginn.1@nd.edu
SO Journal of Power Sources (1 Dec 2009) Volume 194, Number 2, pp. 737-745, 44 refs.
CODEN: JPSODZ ISSN: 0378-7753
DOI: 10.1016/j.jpowsour.2009.06.019
Published by: Elsevier, P.O. Box 211, Amsterdam, 1000 AE (NL)
PUI S0378775309010325
CY Netherlands
DT Journal; Article
LA English
SL English
ED Entered STN: 15 Sep 2009
Last updated on STN: 15 Sep 2009

Too much Cr;
not enough Ni

AN 2009-3612292038 COMPENDEX Full-text
AB Various compositions of binary and ternary Pt-Ni -Cr alloys were investigated as catalysts for the methanol electro-oxidation reaction (MOR). Among the binary (Pt28Ni72/C and Pt28Cr72/C) and ternary Pt-Ni- Cr catalysts (Pt28Ni36Cr36/C, Pt22Ni39Cr39/C, Pt33Ni31Cr36/C, and Pt33Ni36Cr31/C) examined, the Pt28Ni36Cr36/C composition exhibited the highest MOR mass activity (4.42 A gcat.-1) in the as-prepared version, which was higher than the 3.58 A gcat.-1 value of the PtRu/C catalyst after 60 min of chronoamperometry testing. The order of mass activity for the MOR was Pt28Ni36Cr36/C > Pt33Ni36Cr31/C > Pt22Ni39Cr39/C >

Pt33Ni31Cr36/C > Pt28Cr72/C > Pt28Ni72/C, which was slightly changed to Pt28Ni36Cr36/C > Pt22Ni39Cr39/C > Pt33Ni36Cr31/C > Pt33Ni31Cr36/C > Pt28Cr72/C > Pt28Ni72/C after a conditioning process. The effect of anodic conditioning was also studied. A combination of X-ray diffraction, cyclic voltammetry, and chronoamperometry experiments revealed that the conditioning process caused dissolution and an oxidation state change of metallic Ni and Cr2O3 in the binary catalysts. The higher MOR mass activities of the ternary catalysts compared to the binary ones is attributed to co-alloying of Ni and Cr, leading to exposure of more Pt on the catalyst surface without reducing specific activities of the catalysts. The results of this study also correlate well with a prior ranking of catalytic activity of the same compositions in the form of thin film catalysts that we processed and evaluated by a high-throughput combinatorial approach [J.S. Cooper, M.K. Jeon, P.J. McGinn, Electrochem. Commun. 10 (2008) 1545-1547].

AN 2009-3612292038 COMPENDEX Full-text

CC 801 Chemistry; 801.2 Biochemistry; 801.4.1 Electrochemistry; 802.2 Chemical Reactions; 802.3 Chemical Operations; 803 Chemical Agents and Basic Industrial Chemicals; 804 Chemical Products Generally; 804.1 Organic Compounds; 942.2 Electric Variables Measurements; 702.2 Fuel Cells; 461 Bioengineering; 461.2 Biological Materials; 461.6 Medicine; 523 Liquid Fuels; 531.1 Metallurgy; 531.2 Metallography; 543.1 Chromium and Alloys; 547.1 Precious Metals; 548.1 Nickel

CT *Platinum alloys; Binary alloys; Bioassay; Biochips; Catalysis; Catalyst activity; Cell membranes; Chemical analysis; Chromium; Chromium alloys; Chronoamperometry; Cyclic voltammetry; Dissolution; Electrocatalysts; Fuel cells; Methanol; Methanol fuels; Nickel; Oxidation; Platinum

ST Binary catalysts; Catalyst surfaces; Catalytic activity; Combinatorial approach; Combinatorial chemistry; Composition dependence; Conditioning process; High-throughput; Mass activity; Methanol electro-oxidation; Ni-Cr alloys; Oxidation state; PtRu/C catalysts; Specific activity; Ternary catalysts; Thin film catalysts ; X- Ray diffraction

ET Cr*Ni*Pt; Cr sy 3; sy 3; Ni sy 3; Pt sy 3; Pt-Ni-Cr; Cr*Ni*Pt; Cr sy 3; sy 3; Ni sy 3; Pt sy 3; Pt-Ni-Cr; C*Ni*Pt; C sy 3; Pt28Ni72/C; Pt cp; cp; Ni cp; C cp; C*Cr*Pt; Pt28Cr72/C; Cr cp; C*Cr*Ni*Pt; C sy 4; sy 4; Cr sy 4; Ni sy 4; Pt sy 4; Pt28Ni36Cr36/C; Pt22Ni39Cr39/C; Pt33Ni31Cr36/C; Pt33Ni36Cr31/C; Pt*Ru; Pt sy 2; sy 2; Ru sy 2; PtRu; Ru cp; Ni; Cr*O; Cr2O; O cp; Cr; Pt

L75 ANSWER 6 OF 9 INSPEC (C) 2009 IET on STN
AN 2008:10275633 INSPEC Full-text
TI Combinatorial screening of ternary Pt-Ni-Cr catalysts for methanol electro-oxidation
AU Cooper, J.S. (Dept. of Chem. & Biomol. Eng., Univ. of Notre Dame, Notre Dame, IN, USA), Min Ku Jeon (Dept. of Chem. & Biomol. Eng., Univ. of Notre Dame, Notre Dame, IN, USA), McGinn, P.J. (Dept. of Chem. & Biomol. Eng., Univ. of Notre Dame, Notre Dame, IN, USA)
SO Electrochemistry Communications (Oct. 2008), vol.10, no.10, p. 1545-7, 23 refs.
CODEN: ECCMF9, ISSN: 1388-2481
Doc.No.: S1388-2481(08)00345-7
Published by: Elsevier Science S.A., Switzerland
DT Journal
TC Experimental
CY Switzerland
LA English
AN 2008:10275633 INSPEC Full-text
AB Methanol electro-oxidation activity of ternary Pt- Ni-Cr system was studied by using a combinatorial screening method. A Pt-Ni-Cr thin-film library was prepared by sputtering and quickly characterized by a multichannel multielectrode analyzer. Among the 63 different composition thin-film catalysts, Pt28Ni36Cr36 showed the highest methanol electro-oxidation activity and good stability. This new composition was also studied in its powder form by synthesizing and characterizing Pt28Ni36Cr36/C catalyst. In chronoamperometry testing, the Pt28Ni36Cr36/C catalyst exhibited "decay-free" behavior during 600 s operation by keeping its current density up to 97.1% of its peak current density, while the current densities of Pt/C and Pt50Ru50/C catalysts decreased to 14.0% and 60.3% of their peak current densities, respectively. At 600 s operation, current density of the Pt28Ni36Cr36/C catalyst was 23.8 Agnoblemetal-1, while that of those of the Pt/C and Pt50Ru50/C catalysts were 2.74 and 18.8 Agnoblemetal-1, respectively.[All rights reserved Elsevier].

Too much Cr not enough Ni

AN 2008:10275633 INSPEC Full-text
CC A8245 Electrochemistry and electrophoresis; A6855 Thin film growth, structure, and epitaxy; A8115C Deposition by sputtering; A8160 Corrosion, oxidation, etching, and other surface treatments; A8630G Fuel cells; A8265J Heterogeneous catalysis at surfaces and other surface reactions; B8410G Fuel cells
CT carbon; catalysts; chromium alloys; current density; direct methanol fuel cells; electrochemical electrodes; electrochemistry; metallic thin films; nickel alloys; organic compounds; oxidation; platinum alloys; sputter deposition
ST combinatorial screening method; catalysts; methanol electrooxidation activity; sputtering method; multichannel multielectrode analyzer; thin film catalysts; powder

form; chronoamperometry testing; current density; direct methanol
fuel cell; DMFC; PtNiCrC
CHI PtNiCrC ss, Cr ss, Ni ss, Pt ss, C ss
ET C*Cr*Ni; C sy 3; sy 3; Cr sy 3; Ni sy 3; NiCrC; Ni cp; cp; Cr cp; C
cp; Cr; Ni; Pt; Cr*Ni*Pt; Pt sy 3; Pt-Ni-Cr; Pt28Ni36Cr36; Pt cp;
C*Cr*Ni*Pt; C sy 4; sy 4; Cr sy 4; Ni sy 4; Pt sy 4;
Pt28Ni36Cr36/C; C*Pt*Ru; Ru sy 3; Pt50Ru50/C; Ru cp

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YOU HAVE REQUESTED DATA FROM FILE 'PASCAL, ENERGY, COMPENDEX, INSPEC, WPIX
, HCAPLUS' - CONTINUE? (Y)/N:y

L75 ANSWER 7 OF 9 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
DUPLICATE 4
AN 2006-489706 [50] WPIX Full-text
TI Catalyst for fuel cell comprising
platinum alloy having oxygen reduction potential of platinum of 450
millivolt or more, its preparation method, and fuel
cell system containing the catalyst
DC X16
IN CHO K W
PA (SMSU-C) SAMSUNG SDI CO LTD
CYC 1
PI KR 2005103647 A 20051101 (200650)* KO [0]
KR 551034 B1 20060213 (200703) KO
ADT KR 2005103647 A KR 2004-28908 20040427; KR 551034 B1 KR 2004-28908
20040427
FDT KR 551034 B1 Previous Publ KR 2005103647 A
PRAI KR 2004-28908 20040427
IC ICM H01M004-92
IPCI H01M0004-90 [I,C]; H01M0004-92 [I,A]
AB KR 2005103647 A UPAB: 20060804
NOVELTY - Provided are a catalyst for a fuel cell which is reduced in manufacturing cost, has a rapid oxygen reduction velocity, is excellent in reactivity and improves the performance of the total fuel cell system, its preparation method, and a fuel cell system employing the catalyst.

DETAILED DESCRIPTION - The catalyst has an oxygen reduction potential of platinum of 450 mV or more. Preferably the catalyst comprises at least one selected from the group consisting of a platinum-iron alloy and a platinum- chromium-nickel alloy; and the catalyst except a carrier has an average particle size of 30-150

Angstrom. Preferably the content of iron or chromium and nickel in the alloy is 0.3-1.2 mol to 1 mol of platinum.(C) KIPO 2006Image 0/0

FS EPI

MC EPI: X16-E06A1

L75 ANSWER 8 OF 9 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN DUPLICATE 5

AN 1988-261141 [37] WPIX Full-text

DNC C1988-116464 [21]

DNN N1988-198091 [21]

TI Fuel cell electrode catalyst - contains alloy of platinum nickel and chromium

DC L03; X16

IN TSURUMI K

PA (TANI-C) TANAKA KIKINZOKU KOGYO KK

CYC 1

PI JP 63190253 A 19880805 (198837)* JA 3[0]

ADT JP 63190253 A JP 1987-20091 19870130

PRAI JP 1987-20091 19870130

IC IC H01M004-90

EPC H01M0004-90; H01M0004-92

ICO T01M0004:86U2; T01M0004:92S2

AB JP 63190253 A UPAB: 20050429

The catalyst contains an alloy of Pt, Ni, and Cr. The catalyst is pref. composed of electroconductive carbon on which the alloy is carried.

ADVANTAGE - Particle growth of the active metal particles in the catalyst are suppressed in use for long time. Constant electromotive force is obtd. In an example 90 g of electroconductive carbon black heat-treated at 2700 deg.C (specific surface area = 166 m2/g, d(002) = 6,748 angstroms Lc(002) = 221 angstroms was added to 4 1 H2PtCl6 solution containing 10 g platinum with stirring. 4 1 1.25 mol HCOONa aqueous solution was added and vigorously stirred for 3 hrs. Residue was filtrated, washed, and dried at 60 deg.C, then in N2 flow at 120 deg.C, then pulverised to obtain 97 g platinum carbon. 10 g of this platinum carbon was dispersed into 400 ml water, then pH was adjusted to 8 with NH4OH aqueous solution 100 ml of aqueous solution, containing 3 g Ni as Ni nitrate and 1 g Cr as Cr nitrate, was added to the mixture adjusting its pH value to 5 with diluted HNO3. The mixture was vigorously stirred for 20 mins. then slurry was filtrated and dried at 60 deg.C. The cake like prod. was pulverised and heat-treated at 920 deg.C for 3 hrs. in N2 gas flow containing 5 volume% H2.

FS CPI; EPI

MC CPI: L03-E04B
EPI: X16-E06

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=> d l75 9 bib abs hitstr hitind
YOU HAVE REQUESTED DATA FROM FILE 'PASCAL, ENERGY, COMPENDEX, INSPEC, WPIX
, HCAPLUS' - CONTINUE? (Y)/N:y
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L75  ANSWER 9 OF 9  HCAPLUS  COPYRIGHT 2009 ACS on STN
AN   2001:66867  HCAPLUS  Full-text
DN   134:240034
TI   Electrode performance of Pt-Cr-Ni
     alloy catalysts for oxygen electrode in polymer
     electrolyte fuel cell
AU   Shim, Joongpyo; Lee, Hong-Ki
CS   Environmental Energy Tech. Div., Lawrence Berkeley National Lab.,
     California, 94720, USA
SO   Han'guk Chaelyo Hakhoechi (2000), 10(12), 831-837
     CODEN: HCHAEU; ISSN: 1225-0562
PB   Materials Research Society of Korea
DT   Journal
LA   Korean
AB    To improve the catalytic activity of platinum on polymer electrolyte
      fuel cell(PEFC), platinum was alloyed with cobalt and nickel at
      various temperature  By XRD, it was observed the crystal structure of
      alloy catalysts were the ordered face centered cubic(f.c.c) due to
      the superlattice line at 33°.  As heat-treatment temperature was
      increased, the particle size of alloys also were increased and the
      crystalline lattice parameters were decreased. According to the
      results from mass activity, specific activity and Tafel slope
      measured by cell performance test and cyclic voltammogram, the
      catalyst activities of alloys are higher than that pure platinum.
CC   52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
     Section cross-reference(s): 56, 67, 72
ST   conjugated polymer methanofullerene solar cell morphol;
     platinum chromium nickel alloy
     catalyst electrode
IT   Crystal structure
       Fuel cell cathodes
        (electrode performance of Pt-Cr-Ni
        alloy catalysts for oxygen electrode in polymer
        electrolyte fuel cell)
IT   Fuel cells
        (polymer electrolyte; electrode performance of Pt-
        Cr-Ni alloy catalysts for oxygen
        electrode in polymer electrolyte fuel cell)
IT   Platinum alloy, base
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     RL: DEV (Device component use); USES (Uses)
        (electrode performance of Pt-Cr-Ni
        alloy catalysts for oxygen electrode in polymer
        electrolyte fuel cell)
IT   64136-44-3   77950-55-1, Nafion 115
     RL: DEV (Device component use); USES (Uses)
        (electrode performance of Pt-Cr-Ni
        alloy catalysts for oxygen electrode in polymer
        electrolyte fuel cell)


=>
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